Some Hints and Tips when Starting to Use VIP

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Our office was the initial field beta site for VIP in January 2002, and we have been using the new voices for essentially all of our routine NOAA Weather Radio products since then (after the initial dictionary work was complete). In March, we received the VIP 2.0 build, and I reworked the dictionary (the format of which changed from VIP 1.3). To help other offices who are just starting to use VIP, here are some hints and tips which you may find useful.

My dictionary (en-US-root.dic) and preprocessor (opsub.dic) files are included as separate attachments. At the end of this document, I have included printouts of both files.

1. Initial incorporation of VIP into your broadcasts

Probably the easiest way to begin incorporating VIP into your broadcasts is by changing one product type at a time, starting with the one that has the smallest vocabulary. Depending on your location, that might mean beginning with tide forecasts, climate summaries, or hourly roundups. It's probably a good idea to save your free text statements and your warnings for last.

If you have a spare or test transmitter set up, try sending over products to it. Or, if you are more adventurous, you can send over a product to a "live" transmitter, but you run the risk of transmitting some mispronounced words.

You don't have to wait for the product to go back to CRS to listen to it. From the **Log Files** window on VIP, click on **Text Products**, select the product you wish to listen to, highlight the text by dragging with your left mouse button, then right click and select **Play Selected Text**. To change voices, from the main VIP window, click on **File** and select the other voice.

Remember that the VIP products are stored in CRS as .wav files (or their UNIX equivalent). So, as with manually recorded products, you can listen to a VIP product on CRS, but you can't edit it on CRS - or on VIP for that matter. If you correct a mispronounced word via the VIP dictionary, you'll have to resend the product from AWIPS to CRS. To fix a typo in the text, you'll have to do it in AWIPS - by correcting the original product and/or fixing the script in the NWR Browser.

I found that it was helpful to place a manually recorded message on all my transmitters explaining that I was testing the new voices, and that there would be some mispronunciations. I asked listeners to e-mail me or phone our ring-through number to pass along any mispronounced words that they heard, along with any comments they had about the new voices. And I did receive a lot of responses - some positive and

some negative, as well as several mispronounced words.

2. Different voices for different products

When you install CRS 8.0, all the products in your database will default to the male VIP voice. How you decide to use the VIP voices is up to you. Since the only method to change the voice is via the **Message Type** window in CRS - one message at a time, you probably won't be switching voices that often.

Being a coastal office, I decided to use the male voice for all land based products (hourly roundup, zones, etc.), and the female voice for all marine products.   Up until now, I have continued to use the CRS voice for warnings and statements, but am in the process of switching things over to VIP. Ideally, I would love to have had a VIP third voice to use exclusively for warnings and statements, but I've divided the warnings up between the two voices in the same way that the regular products are divided (male for land, female for marine).

3. Initial dictionary work

Your initial dictionary work should be geared toward the first products you decide to send through VIP. Listen to those products and try to correct any words or phrases which you feel aren't bring pronounced correctly. Note that some words will be pronounced differently depending on the context or placement in the sentence, and that the male voice will pronounce some words differently than the female voice - *even when you apparently "fix" the pronunciation in the dictionary*. There are no absolute pronunciations with the VIP voices, as there are with the CRS voice. That is, the VIP algorithms will sometimes overrule your pronunciation for its own.

Here are a few examples of "problem" words I've found:

normal   it's normally pronounced properly, except when it occurs before a comma or period. Then it's pronounced "nor-MEL".

temperature he pronounces it as TEM-per-a-ture, while she says TEMP-a-ture. Since I only use the female voice for marine products, she would only rarely use the word, so I didn't spend a lot of time on getting her to pronounce it better.

When entering words into the dictionary, here are a few things that I've found helpful:

- Before you start - be warned!! If you have the standard 15" computer screen on your 5MP/VIP machine, you will find the text in the input boxes of both the dictionary and preprocessor windows to be quite small. Also, the font used makes the number 1 looks similar to a capital I (eye).
- Rather than open the rather large phoneme window on the screen, I made a phoneme table (which I included as the last page of this paper). I tape it on the side of the screen

when I'm checking words in the dictionary. As with everything else I'm sending out, feel free to change it to whatever works for you.

- I also like to use the tearaway feature with the two sub-menus that control which voice 'talks' via the VIP speaker. There is a general selector in the main VIP menu (go to **File**) which works most everywhere except for the TTS Clipboard. The Clipboard has its own voice selector under the **Options** submenu. I keep them next to their corresponding window, which makes it much easier to switch back and forth between the two voices.

- While multi-syllable words must include a '1' for a stressed syllable, sometimes you might find it useful to include more than one '1' in a word if a secondary stress '2' doesn't seem to do enough - although to be honest, I'm not sure if the '2' does any good anyway. See my dictionary file for examples.

- You can put breaks between the syllables (by using a period, aka '.'), but the system ignores it when pronouncing the word. It just relies on the vowels and the 1's and 2's (for stress) in the word.

- If you have trouble getting both voices to pronounce a word or place name the way you want, try to optimize it for the voice that will use it the most, or will use it in warnings. Hopefully we can set up a regional or national repository for "problem" words and proposed solutions.

4. Local geographical names in your dictionary

Overall, the VIP 2.0 algorithms do a somewhat better job pronouncing words than CRS does. For example, of 300 Pennsylvania place names I checked with our system, 79 had been mispronounced by CRS, while 60 were mispronounced by one or both of the VIP voices. But of those 60 VIP miscues, 21 were names that CRS had pronounced correctly. So you won't be able to just check the words in your current CRS dictionary. You'll have to run through all the place names in the areas for which you forecast and/or warn.

This is the method I used to run my local place names through VIP:

1. Open a Clipboard window on VIP (**File**->**TTS Clipboard**)

2. Open the Dictionary window elsewhere in the screen. I like to put the dictionary window on top of the Clipboard window, with the tearaway voice selection windows at the side.

3. Type one word or phrase on each line. You can follow each one with a comma or period, but remember that the pronunciations may change. You should be able to fit 16 or 17 rows in the window at once, which is plenty to check at one time. If you have a lot of words to check, or you're in a hurry, fill each line of the Clipboard window up with

words, separating each word or name with a comma or period.

4. Listen to all the words with one voice, and then the other. Keep track of which words are mispronounced by either or both voices.

5. Go to your dictionary window and make the appropriate changes. Note that for some phrases, you may have to use the Preprocessor to get them to sound right. One example from my list was "Havre de Grace", a city in Maryland. Both voices said "Havre Delaware Grace".

5. Pitfalls of the preprocessor

While the VIP preprocessor is a powerful tool which you will find helpful in fixing poorly pronounced phrases or expanding abbreviated words, there are some pitfalls you need to be aware of:

- As stated above, if you have a standard 15" computer screen on your 5MP/VIP machine, you will find the text in the input boxes of the preprocessor window to be quite small. Also, the font used makes the number 1 looks similar to a capital I (eye).

- Since the preprocessor uses commas as delimiters in its file, you can't substitute for a comma (either by itself or in a phrase). You can, however, put commas in the substitution window, although they, and all the text to the right of them will be deleted if you try to re-edit the entry after saving it. You'll just have to type it over again.

- The preprocessor will only substitute for words or phrases that are on a single line of text. It the phrase you want to replace carries over to another line, the preprocessor will not be able to help you.

- Be careful when defining your substitutions. You may replace more than you bargained for, or you might not replace something that you wanted to replace. As an example, we use the offshore waters extended forecast on our coastal radios. Included in the outlook is the phrase "1000 FATHOMS", which VIP pronounced as "ten hundred fathoms" rather then "one thousand fathoms". If you just replaced '1000' with 'one thousand', you might later hear a time of 'one thousand PM'.

6. Notes on my preprocessor and dictionary files

Preprocessor file (opsub.dic)

- My additions to the preprocessor file are at the beginning of the GENERAL DIGIT SUBST and SPECIFIC SUBST sections. I made a few changes to later entries, mainly with abbreviations that end in a period. Some of them did not have a period at the end of the replacement phrase, which I found would occasionally result in run-on sentences.

- There is probably quite a bit of the preprocessor file that could be deleted, mainly the

non-meteorological abbreviations and the GREATEST STROM (sic) TOTAL DATA SUBST at the end of the file. I just never got around to doing it myself.

- I found that times ending in :00, such as 9:00 PM, were pronounced as "nine o'clock PM". I added all 24 hours to get rid of the "o'clock". There is also a problem with the phrase "at 8". The male voice runs it together, so I added separate entries later for "at 8:00 PM".

- There also seems to be a problem with a number range ending in 18, hence all the entries of <number> to 18. I couldn't get the wildcard to work right, so I made a separate entry for each number.

- I found that number ranges with a 2 in them sometimes sounded quite confusing. The marine phrase "SEAS SUBSIDING TO 2 TO 4 FT" came across as "SEAS SUBSIDING TWO TWO TWO FOUR FEET". Thus, you will see several entries with the "to" replaced with "ta". I define "ta" in the dictionary to sound like "tuh", which seems better to me. If you decide you don't like it, feel free to delete all those lines.

- I had a problem with the female voice and the phrase "10 TO 15", as in "WINDS 10 TO 15 KNOTS." So I replaced "10 to 15" with the word "tentofifteen", which is defined in the dictionary. If you remove the "ta" entries, you should probably remove this one as well.

- Most of the other entries that I made were to try and correct glitches that came up. They may or may not be appropriate to your own situation, especially if you've "tuned" your CAFÉ formatters differently than we have here, or if you use another formatter. Feel free to delete them if you wish. All of my entries should be above the "A.M." entry under SPECIFIC SUBST.

Dictionary (en-US-root.dic)

- My dictionary file is mostly local place names and personnel names. Since we're just beginning to use VIP for statements and warnings, I'm sure I'll find more words that need fixing. While some of my neighboring offices may find it helpful if they broadcast forecasts and warnings from our office, the main benefit for most of you will be to see which phoneme(s) work best to make certain sounds.

- There are some words included in the dictionary that I'm not entirely satisfied with. I will be going back later to see how to make them sound better. Those words are in the printout with an asterisk in front of them.
- The printout for my dictionary file has the numbers bolded to make them easier to see. The Courier font I used makes the number one look like a lower case 'el'.

- You will notice that some entries have two stressed syllables (with a number one before them), which proved useful in trying to get them to sound better. One specific case is a word like "RIVERSIDE" with a D in the last syllable. Stressing the last syllable was the only way I found to get the D not to sound like a T.

7. Last but not least

While most of your listeners will agree that the VIP 2.0 voices are an improvement over the CRS voice, the new voices are by no means perfect. I was a bit surprised at the number of people who said they'd rather keep the CRS voice. You will hear some quirky pronunciations and inflections from VIP, no matter how much you fiddle with the words. (I hope you enjoy hearing the male voice say "TONIGHT, CLEAR." as much as I do.)

If you have any questions or run into problems with VIP, feel free to contact me. I can't promise that I'll be able to answer your question, but I'll try. Since I work rotating shifts like the rest of you, the best way to do it is via e-mail, at arthur.kraus@noaa.gov.
I usually check my e-mail at least once a day, even on days when I'm not at work.

Mount Holly preprocessor file

This is a printed copy of my preprocessor file (opsub.dic). Most of my edits are at the beginning of the file. To be honest, much of the later abbreviations and GREATEST STROM TOTALS DATA could probably be deleted, but I just never got around to it.

\!GLOBAL ENTRIES

#GENERAL DIGIT SUBST.
12:00 AM,midnight
1:00 AM,one ay em
2:00 AM,two ay em
3:00 AM,three ay em
4:00 AM,four ay em
5:00 AM,five ay em
6:00 AM,six ay em
7:00 AM,seven ay em
8:00 AM,eight ay em
9:00 AM,nine ay em
10:00 AM,ten ay em
11:00 AM,eleven ay em
12:00 PM,noon
1:00 PM,one p em
2:00 PM,two p em
3:00 PM,three p em
4:00 PM,four p em
5:00 PM,five p em
6:00 PM,six p em
7:00 PM,seven p em
8:00 PM,eight p em
9:00 PM,nine p em
10:00 PM,ten p em
11:00 PM,eleven p em
PM.,pee em. \!p300
@@@ AM,@:@@ Ay em
@@@@ AM,@@:@@ Ay em
@@@ PM,@:@@ P M
@@@@ PM,@@:@@ P M
@:@@ AM,@:@@ Ay em
@@:@@ AM,@@:@@ Ay em
@:@@ PM,@:@@ P M
@:@@ PM.,@:@@ P M \!p150
@@:@@ PM,@@:@@ P M
@@:@@ PM.,@@:@@ P M \!p150

These substitutions should remain
in this order!
B@@@,@@@ degrees below zero
@@@B,@@@ degrees below zero
B@@,@@ degrees below zero
@@B,@@ degrees below zero
B@,@ degrees below zero
@B,@ degrees below zero

-@,minus @
+@,plus @
-@@,minus @@
+@@,plus @@

#SPECIFIC SUBST.
.TODAY,TODAY
.REMAINDER OF TODAY,FOR THE REST OF TODAY
.REST OF TODAY,FOR THE REST OF TODAY
.FOR THE REST OF TODAY,FOR THE REST OF TODAY
.FOR THE REMAINDER OF TODAY,FOR THE REST OF TODAY
.THIS AFTERNOON,THIS AFTERNOON
.TONIGHT,TONIGHT
.OVERNIGHT,OVERNIGHT
.SUNDAY,SUNDAY
.MONDAY,MONDAY
.TUESDAY,TUESDAY
.WEDNESDAY,WEDNESDAY
.THURSDAY,THURSDAY
.FRIDAY,FRIDAY
.SATURDAY,SATURDAY
.AND THE EXTENDED FORECAST,AND THE EXTENDED FORECAST
.AND NOW THE EXTENDED FORECAST,AND NOW THE EXTENDED FORECAST
10 to 15,tentofifteen
above normal,above \![1nor.mxl]
afb,air force base
at 8,att \!p100 8
at 8:00 PM,att \!p100 8 p em
at 8:00 PM.,att \!p100 8 p em.
at Reading,att \!p1 redding
bechtelsville,becktilsville
begining,beginning
bell mar,belmar
BWI,Bee double-u eye
CAPE MAY LEWES,CAPE MAY, LEWES
dawn,dauen

de,delaware
east newark,east newurk
forked river,\![fork.1Xd] river
fort lee,fort \!p1 lee
from the calm,calm
havre de grace,havre de-grace
ho-ho-kus,ho-ho-kiss
light to moderate,light to moderit
low tide,low \!p1 tide
low tides,low \!p1 tides
martin st,martin state
MCADOO,macadoo
maurice river,morris river
MLLW,mean lower low water
moderate to gale,moderit to gale
mt holly,mount holly
mt. holly,mount holly
nas,naval air station
near dunellen,near \!p1 dunellen
near east,near \!p1 east
near hudson,near \!p1 hudson
new wurk,newurk
partly sunny,partly \![1sH.ni]
reading,redding
st. michaels,saint michaels
sal's bury,salisbury
sunday night,\![1sHn.1de] night
.sunday night,\![1sHn.1de] night
TENTH,tenth
TENTHS,tenths
the east,the \!p4 east
whitesboro-burliegh,whitesboro burliegh
@.@@,@ point @ @
@@.@@,@@ point @ @
@@@.@@,@@@ point @ @
@@@@.@@,@@@@ point @ @
162.@@@,1 62 point @ @ @
1/2,one-half
1/3,one-third
2/3,two-thirds
1/4,one-quarter
3/4,three-quarters
1/8,one-eighth
@/8,@ eighths
1/10,one-tenth
@/10,@ tenths

1/16,one-sixteenth
to 18,two 18
1 to 18,1, to 18
2 to 18,2, to 18
3 to 18,3, to 18
4 to 18,4, to 18
5 to 18,5, to 18
6 to 18,6, to 18
7 to 18,7, to 18
8 to 18,8, to 18
9 to 18,9, to 18
10 to 18,10, to 18
11 to 18,11, to 18
12 to 18,12, to 18
13 to 18,13, to 18
to 13 to 18,ta 13, two 18
14 to 18,14, to 18
15 to 18,15, to 18
16 to 18,16, to 18
17 to 18,17, to 18
@ to 18,@, two 18
to @ to 18,ta @, two 18
to @@ to 18,to @@ two 18
@@ to 18,@@ two 18
2 to @,2 ta @
to 2,ta 2
to @ to 2,ta @ ta 2
to 2 to @,ta 2 ta @
to @ to @,ta @ ta @
@ to @,@ ta @
to @ to @@,ta @ ta @@
@ to @@,@ ta @@
to @@ to @@,ta @@ ta @@
@@ to @@,@@ ta @@
to @@ to @@@,ta @@ ta @@@
@@ to @@@,@@ ta @@@
low to mid,low ta mid
lower to mid,lower ta mid
mid to upper,mid ta upper
B1,one degree below zero
1B,one degree below zero
&,AND
1000 fathoms,one thousand fathoms
100S,one hundreds
10S,teens
20s,twenties

30s,thirties
40s,forties
41,forty one
42,forty two
43,forty three
44,forty four
45,forty five
46,forty six
47,forty seven
48,forty eight
49,forty nine
50s,fifties
60s,sixties
70s,seventies
80s,eighties
90s,nineties
A.M.,A M.
a.m.,A M.
AARP,A A R P
Adm.,Admiral
ADP,A D P
ADT,Alaska daylight time
API,A P I
APR,April
APR.,APRIL.
Apr.,April.
Assoc.,Associates
asst.,Assistant
ASST.,Assistant
AST,Atlantic Standard Time
ATLC.,Atlantic.
atty.,Attorney
ATTY.,Attorney
AUG,August
AUG.,August.
Aug.,August.
Av.,Avenue.
AVBL,available
avbl,available
Ave.,avenue.
AVE,avenue
AVG.,average.
bldg.,building.
BLDG.,building.
Blvd.,Boulevard.
BLVD.,Boulevard.

Bros.,Brothers.
BROS.,Brothers.
CDT,central daylight time
CLDY,cloudy
cldy,cloudy
cm.,centimeter.
CM.,centimeter.
cms.,centimeters.
CMS.,centimeters.
cont.,continued.
CONT.,continued.
Corp.,Corporation.
CORP.,Corporation.
CST,central standard time
Ctr.,Center.
CTR.,Center.
cu.,Cubic
CU.,Cubic
DC,D C
D.C.,D C.
DEC,December
DEC.,DECEMBER.
Dec.,December.
minus one deg.,minus one degree.
zero deg.,zero degree.
one deg.,one degree.
deg.,degrees.
DEG.,degrees.
Dept.,Department.
DEPT.,Department.
DIR,Direction
dir,Direction
Dist.,distance
dist.,distance
doz.,dozen.
DOZ.,dozen.
E,EAST
E.,East.
e.g.,for example.
EDT,EASTERN DAYLIGHT TIME
ENE,east northeast
equip.,equipment
EQUIP.,equipment
ESE,East southeast
esp.,especially
ESP.,especially

EST,eastern standard time
est.,established.
etc.,etcetera.
ETC.,etcetera.
F,FALLING
F.,falling
FEB,February
FEB.,February.
Feb.,February.
fig.,figure
FIG.,figure
one FM,one fathom
FM,Fathoms
FR,FALLING RAPIDLY
FRI,Friday
FRI.,Friday.
Fri.,Friday.
ft.,feet.
FT.,feet.
Gen.,General
GEN.,General
Gov.,Governor
GOV.,Governor
HR,hour
HR.,hour
HRS,hours
HRS.,hours
HT,height
ht,height
HX,HEAT INDEX
I.E.,that is.
i.e.,that is.
in.,inch.
IN.,INCHES.
ins.,inches.
Intl,International
INTL.,International.
IRS,I R S
JAN,Jan
JAN.,JANUARY.
Jan.,January.
JUL,JULY
JUL.,JULY.
Jul.,July.
JUN,JUNE
JUN.,JUNE.

Jun.,June.
kg.,kilogram.
KG.,kilogram.
kgs.,kilograms.
KGS.,kilograms.
km.,kilometer.
KM.,kilometer.
KT,knot
KT.,knot.
KTS,KNOTS
KTS.,knots.
LAT,LATITUDE
Lat,latitude
lb.,pound.
LB.,pound.
lbs.,pounds.
LBS.,pounds.
LON,longitude
Lon,longitude
LT,LIGHTHOUSE
LT.,lighthouse
Ltd.,Limited.
LTD.,Limited.
M,MISSING
MAR,MARCH
MAR.,MARCH.
Mar.,March.
MB,mb
MB.,millibars.
mb.,millibars.
MDT,mountain daylight time
mg.,milligram.
MG.,milligram.
mgs.,milligrams.
MGS.,milligrams.
mhz,megahertz
MI,MILES
mi.,mile.
MI.,miles.
misc.,miscellaneous.
MISC.,miscellaneous.
MISG,missing
ml.,milliliter.
ML.,milliliter.
MM,missing
mm.,millimeter

MON,MONDAY
MON.,Monday.
Mon.,Monday.
MOSUNNY,mostly sunny
MPH,MILES AN HOUR
mph,miles an hour
msec.,millisecond.
MSEC.,millisecond.
msecs.,milliseconds.
MSECS.,milliseconds.
MST,mountain standard time
N,NORTH
N.,north.
NE,northeast
NEXRAD,NEX-RAD
NM,NAUTICAL MILES
NM.,nautical miles.
nm.,nautical miles.
NNE,north northeast
NNW,NORTH NORTHWEST
NOAA,noah
NOV,NOVEMBER
NOV.,November.
Nov.,November.
ns.,nanosecond.
NS.,nanosecond.
nsec.,nanoseconds.
NSEC.,nanoseconds.
NW,NORTHWEST
NWS,National Weather Service
OBS,OBSERVATION
OCT,October
OCT.,OCTOBER.
Oct.,October.
oz.,ounce.
OZ.,ounce.
ozs.,ounces.
OZS.,ounces.
p.m.,P M.
P.M.,P M.
PAC,Pacific
PDT,pacific daylight time
POSITN,POSITION
POSITN.,position.
PRES,pressure
pres,pressure

PRESS,PRESSURE
PRT,PARTLY
PSN,Position
PST,PACIFIC STANDARD TIME
PT,POINT
pt,point
PTSUNNY,PARTLY SUNNY
qt.,quart.
QT.,quart.
R,RISING
R.,rising rapidly
RADID,RAY-DID
Rd.,road.
RD.,road.
Rd*,road
Rep.,Representative.
REP.,Representative.
RR,rising rapidly
Rte.,route.
RTE.,route.
Rte*,route
S*,SOUTH
S.*,south.
SAT,Saturday
SAT.,Saturday.
Sat.,Saturday.
SE,southeast
sec.,second.
SEC.,second.
secs.,seconds.
SECS.,seconds.
SEP,SEPTEMBER
SEP.,SEPTEMBER.
Sep.,September.
SM,STATUTE MILES
SP,SPEED
SP.,speed.
sq.,square
SSE,SOUTH SOUTHEAST
SSW,SOUTH SOUTHWEST
SUN.,Sunday.
Sun.,Sunday.
SW,southwest
TEMP,temperature
THRTY,THIRTY
THRTY.,thirty

THU,Thursday
THU.,Thursday.
Thu.,Thursday.
TSTM,Thunderstorm
TUE,TUESDAY
TUE.,Tuesday.
Tue.,Tuesday.
TV,television
UK,U K
Univ.,University
UNIV.,University
U.S.,United States.
USA,U S A
usec.,microsecond
USEC.,microsecond
Vol.,Volume
VOL.,Volume
vs.,versus
VS.,versus
VSB,visibility
VSBY,visibility
W,WEST
W.,west.
WCI,windchill index
WED.,Wednesday.
Wed.,Wednesday.
WED,WEDNESDAY
WNW,west northwest
WSW,west southwest
XMAS,Christmas
yd.,yard.
YD.,yard.
yds.,yards.
YDS.,yards.

GREATEST STROM TOTAL DATA SUBST.
#
FIRST 12 MONTHS
(01/@@,January @@
(02/@@,February @@
(03/@@,March @@
(04/@@,April @@
(05/@@,May @@
(06/@@,June @@
(07/@@,July @@
(08/@@,August @@

(09/@@,September @@
(10/@@,October @@
(11/@@,November @@
(12/@@,December @@

HOURS AND MONTHS SO 12 * 24 ENTRIES
/00-01, at midnight to January
/00-02, at midnight to February
/00-03, at midnight to March
/00-04, at midnight to April
/00-05, at midnight to May
/00-06, at midnight to June
/00-07, at midnight to July
/00-08, at midnight to August
/00-09, at midnight to September
/00-10, at midnight to October
/00-11, at midnight to November
/00-12, at midnight to December

/01-01, at 1:00 AM to January
/01-02, at 1:00 AM to February
/01-03, at 1:00 AM to March
/01-04, at 1:00 AM to April
/01-05, at 1:00 AM to May
/01-06, at 1:00 AM to June
/01-07, at 1:00 AM to July
/01-08, at 1:00 AM to August
/01-09, at 1:00 AM to September
/01-10, at 1:00 AM to October
/01-11, at 1:00 AM to November
/01-12, at 1:00 AM to December

/02-01, at 2:00 AM to January
/02-02, at 2:00 AM to February
/02-03, at 2:00 AM to March
/02-04, at 2:00 AM to April
/02-05, at 2:00 AM to May
/02-06, at 2:00 AM to June
/02-07, at 2:00 AM to July
/02-08, at 2:00 AM to August
/02-09, at 2:00 AM to September
/02-10, at 2:00 AM to October
/02-11, at 2:00 AM to November
/02-12, at 2:00 AM to December
/03-01, at 3:00 AM to January
/03-02, at 3:00 AM to February

/03-03, at 3:00 AM to March
/03-04, at 3:00 AM to April
/03-05, at 3:00 AM to May
/03-06, at 3:00 AM to June
/03-07, at 3:00 AM to July
/03-08, at 3:00 AM to August
/03-09, at 3:00 AM to September
/03-10, at 3:00 AM to October
/03-11, at 3:00 AM to November
/03-12, at 3:00 AM to December

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/04-02, at 4:00 AM to February
/04-03, at 4:00 AM to March
/04-04, at 4:00 AM to April
/04-05, at 4:00 AM to May
/04-06, at 4:00 AM to June
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/23-12, at 11:00 PM to December

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/@@/01),@@ at 1:00 AM
/@@/02),@@ at 2:00 AM
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/@@/04),@@ at 4:00 AM

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/@ @/22),@ @ at 10:00 PM
/@ @/23),@ @ at 11:00 PM
```

Mount Holly dictionary file

This is a printed copy of my dictionary file (en-US-root.dic). The asterisks indicate a word which one or both voices still don't pronounce as well as I'd like. I bolded the numbers in the file to make them easier to see. Not all the multi-syllable words have a 0 (zero) in them. I did it when I first began my dictionary work, but then later realized it didn't matter, so I stopped.


```
absecon            \![Ab.1si.kxn]
*adelphi           \![x.1dEl.fY]
aldan              \![1al.dxn]
allaire          \![0x.1lEr]
allamuchy             \![2Al.x.1mu.Ci]
arbutus            \![ar.1byu.txs]
ashland            \![1AS.lxnd]
assunpink             \![1As.xn.pInk]
atglen             \![1At.glEn]
athyn              \![1A.Txn]
atreading          \![At.1rEd.IG]
audubon            \![1c.dx.ban]
avenel             \![1Av.x.nEl]
avondale           \![1Av.xn.del]
baltimore          \![1bcl.Fx.mor]
baltimores         \![1bcl.Fx.mors]
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bellefonte	\![**1**bEl.**0**fant]
bellmawr	\![**1**bEl.mar]
belmar	\![**1**bEl.mar]
bergen	\![**1**bR.gxn]
*bergenfield	\![**1**bR.gxn.fild]
bernardsville	\![**1**bR.nRdz.vll]
*bertha	\![**1**bR.Tx]
bethlehem	\![**1**bET.lx.**2**hEm]
bloomfield	\![**1**blum.fild]
bowmanstown	\![**1**bo.mxnz.tWn]
*boyertown	\![**1**bO.xr.**1**tWN]
brentwood	\![**1**brEnt.**1**wUd]
brielle	\![bri.**1**El]
brigantine	\![**1**brIg.xn.**1**tin]
brodheadsville	\![**1**brcd.hEdz.vll]
broomall	\![**1**brum.cl]
browns	\![brWnz]
buena	\![**1**byu.nx]
burtonsville	\![**1**bR.txns.vll]
califon	\![**1**kAl.x.**2**fan]
calverton	\![**1**kAl.vR.txn]
carteret	\![kar.tR.**1**Et]
catonsville	\![**1**ke.txns.vll]
chalfont	\![**1**SAl.**0**fant]
*chestertown	\![**1**CEs.tR.tWn]
cheverly	\![**1**SEv.R.li]
*choptank	\![**1**Cap.tAnk]
christ	\![krIst]
closter	\![**1**klc.stR]
cloudiness	\![**1**klW.di.**2**nxs]
cloudy	\![**1**klW.**0**Fi]
collingdale	\![**1**kal.IG.**2**del]
collings	\![**1**kal.IGs]
colmar	\![**1**kol.**1**mar]
concordia	\![kan.**1**kord.ix]
conshohocken	\![**2**kan.Sx.**1**hak.xn]
coopersburg	\![**1**ku.pxrz.bRg]
coplay	\![**1**kap.li]
coral	\![**1**kor.xl]
cristobal	\![**1**krIs.tx.bxl]
delisi	\![dx.**1**li.si]
delmar	\![**1**dEl.mar]
develop	\![dx.**1**vEl.xp]
developing	\![dx.**1**vEl.xp.IG]

dover	\![**1**do.**0**vR]
dundalk	\![**1**dHn.dak]
during	\![**1**dR.**2**IG]
east	\![ist]
eatontown	\![**1**i.Fxn.tWn]
eberwine	\![**1**Eb.R.**1**wYn]
edgemere	\![**1**EJ.mir]
edouard	\![Eh.**1**dward]
elmwood	\![**1**Elm.wUd]
emmaus	\![I.**1**me.xs]
ephraim	\![**1**Ef.rxm]
estell	\![x.**1**stEl]
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fallston	\![**1**fcl.stxn]
fanwood	\![**1**fAn.**0**wUd]
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federalsburg	\![**1**fEd.R.xlz.**2**bRg]
fenwick	\![**1**fEn.wIk]
frederica	\![**2**frEd.R.**1**i.kx]
gibbstown	\![**1**gIbz.tWn]
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glendon	\![**1**glEn.dxn]
glenolden	\![glEn.**1**ol.dxn]
glenside	\![**1**glEn.**1**sYd]
graande	\![grAnd]
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*heathcote	\![**1**hiT.kot]
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hegins	\![**1**hE.gInz]
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hudson	\![**1**hHd.sxn]
hulmeville	\![**1**hElm.vIl]
intensify	\![In.**1**tEns.x.**2**fY]
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isidore	\![**1**Iz.x.**1**dor]
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kutztown	\![**1**kuts.tWn]
landsdowne	\![**1**lAnz.dWn]
lavellette	\![**1**lA.vx.lEt]
lawnside	\![**1**lcn.**1**sYd]
lawsonia	\![lc.**1**zon.i.x]
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lochearn	\![**1**lak.xrn]
*lodi	\![**1**lo.**1**dY]
louisiana	\![lu.**2**iz.i.**1**A.nx]
lower	\![**1**lo.R]
mabel	\![**1**me.bxl]
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macungie	\![mx.**1**kHG.Ji]
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mantoloking	\![**1**mAn.tx.**2**lo.kIG]
matawan	\![**1**mAt.x.**2**wan]
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metuchen	\![mx.**1**tHC.xn]
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mohawk	\![**1**mo.**2**hck]
montauk	\![**1**man.tck]
montgomerysville	\![mant.**1**gHm.R.iz.**2**vll]
monticello	\![**2**man.**0**tx.**1**sEl.**0**o]
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nazareth	\![**1**nAz.R.IT]
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nesquehoning	\![nEs.kwx.**1**hon.IG]

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newfield	\![**1**nu.**1**fild]
newfoundland	\![**2**nu.fxnF.**1**lAnd]
newmanstown	\![**1**nu.mxnz.tWn]
normal	\![**1**norm.**2**xl]
normally	\![**1**norm.x.li]
northvale	\![**1**norT.vel]
octoraro	\![**2**ak.tx.**1**rAr.o]
omar	\![**1**o.**1**mar]
oradell	\![**1**or.x.**1**dEl]
palmer	\![**1**pa.mR]
palmyra	\![**0**pcl.**1**mY.rx]
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pasadena	\![**1**pAs.x.**1**di.nx]
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pennypack	\![**1**pEn.i.pAk]
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philadelphia	\![**2**fIl.x.**1**dEl.fi.x]
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pocomoke	\![**1**po.kx.**2**mok]
pocono	\![**1**po.**0**kI.**2**no]
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reiffton	\![**1**rYf.**1**txn]
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roseto	\![ro.**1**zi.to]
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rutherford	\![**1**rH.TR.fRd]
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*tenafly	\![**1**tEn.x.flY]
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tuscarora	\![**2**tHs.kx.**1**ror.x]
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*willow	\![**1**wll.o]
wilmington	\![**1**wll.mIG.txn]
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winds	\![wInz]

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*wyckoff	\![**1**wY.**1**kcf]
wyncote	\![**1**wIn.**1**kot]
wyndmoor	\![**1**wInd.mor]
wynonah	\![wY.**1**no.nx]
wyomissing	\![**2**wY.o.**1**mIs.IG]
*yeadon	\![**1**ye.dxn]
yukon	\![**1**yu.**1**kan]

Vowels

A   short a   Phoneme Table
e   long a
a   ah
c   aw
E   short e
i   long e
X   unstressed e
I   short i
Y   long i
o   long o
O   oy
u   ooh   (z*oo*)
U   oo   (t*oo*k)
R   er, ur
W   ow
H   stressed short u
x   unstressed uh

Each group (vowels and consonants) is set up more or less in alphabetic order of the sound produced

Consonants

b   b
C   ch
d   d
F   unstressed d or t
N   end of word en, on
f   f
g   g
h   h
J   J
k   k
l   l
m   m
n   n
G   ng
N   end of word en, on
p   p
r   r
s   s
S   sh
t   t
F   unstressed d or t
D   thuh   (*th*is)
T   th   (*th*ing)
v   v
w   w
y   y
z   z
Z   zh